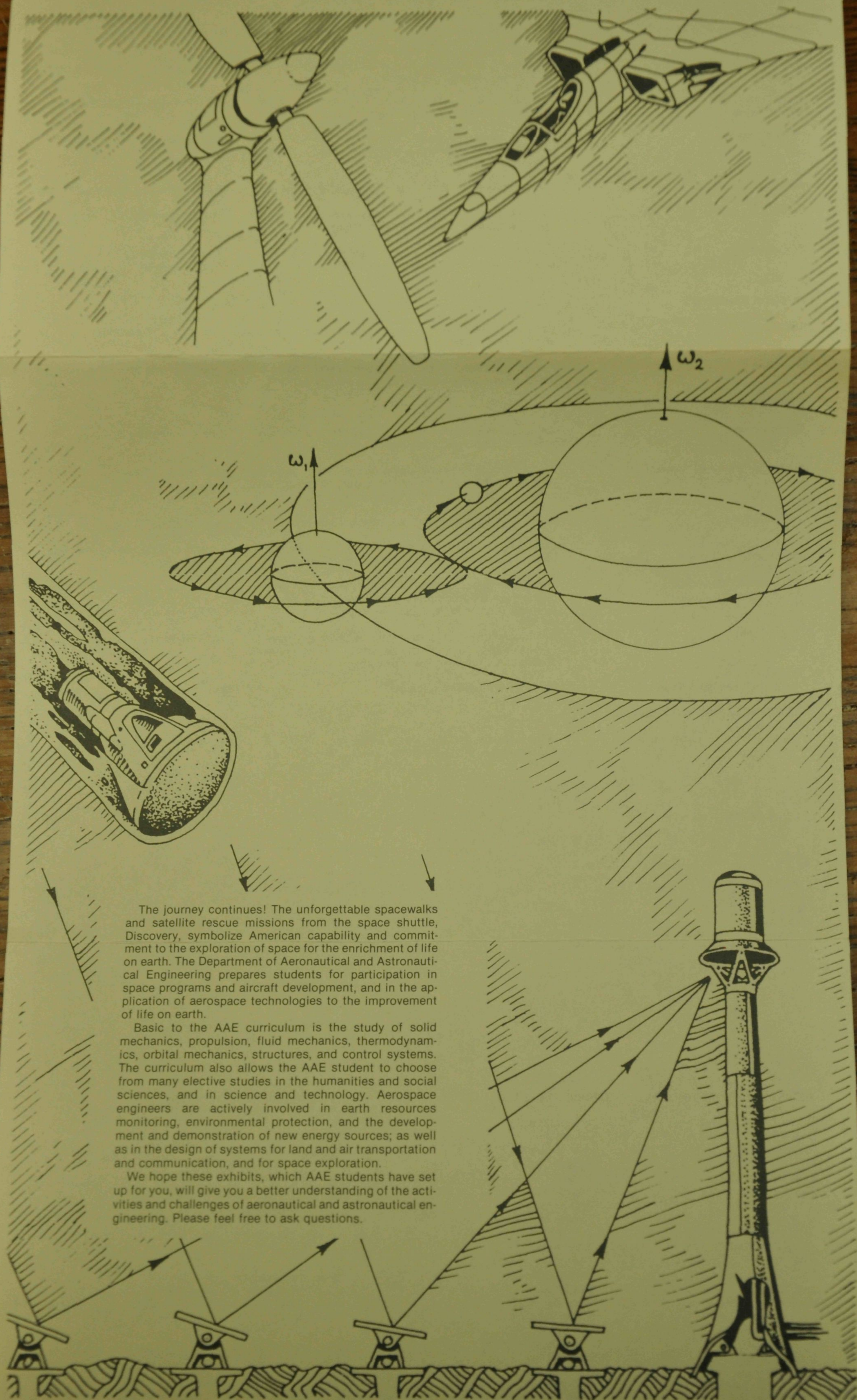


AERONAUTICAL AND ASTRONAUTICAL ENGINEERING DEPARTMENT
ENGINEERING OPEN HOUSE 1985



The journey continues! The unforgettable spacewalks and satellite rescue missions from the space shuttle, Discovery, symbolize American capability and commitment to the exploration of space for the enrichment of life on earth. The Department of Aeronautical and Astronautical Engineering prepares students for participation in space programs and aircraft development, and in the application of aerospace technologies to the improvement of life on earth.

Basic to the AAE curriculum is the study of solid mechanics, propulsion, fluid mechanics, thermodynamics, orbital mechanics, structures, and control systems. The curriculum also allows the AAE student to choose from many elective studies in the humanities and social sciences, and in science and technology. Aerospace engineers are actively involved in earth resources monitoring, environmental protection, and the development and demonstration of new energy sources; as well as in the design of systems for land and air transportation and communication, and for space exploration.

We hope these exhibits, which AAE students have set up for you, will give you a better understanding of the activities and challenges of aeronautical and astronautical engineering. Please feel free to ask questions.

AERONAUTICAL AND ASTRONAUTICAL ENGINEERING DEPARTMENT

ENGINEERING OPEN HOUSE 1985

EXHIBITS IN AERO LAB B

Wind Tunnel

PROJECT DESCRIPTIONS

Demonstration of an operating wind tunnel; pressure distributions and lift generation by an airfoil.

PROJECT LEADERS (AND THEIR HIGH SCHOOLS)

Brian Williams (Bellville West)

Magnus Effect

The phenomenon of lift generation when air passes over a rotating cylinder.

Mike Hoffman (Urbana)

Tornado Box

A mini tornado will be created to illustrate the mechanisms of atmospheric circulation.

Jeff Puryear (Granite City North)

Supersonic Flow Simulation
(Water Table)

The shallow water analogy is used to illustrate supersonic flow about various body shapes.

Ayhan Mertogul (Lane Technical)

Wind Power

Working models of Savonius and Darrieus wind turbines illustrate engineering principles associated with wind power.

Dan McCaugherty (Hinsdale)

Aerospace Structures

Demonstrations of shear flow, vibrations, and buckling.

Karl Pendergast (Wheaton North)

Vortex Gun

Generation of invisible smoke rings. Special properties of real vortices. (Audience Participation)

Nancy Flynn (Rich Central)

Scissor Wing

Variable-sweep pivoted wing in a wind tunnel demonstrates the principles and application of the NASA scissor wing.

Ron Blum (MacArthur)
Roger Eastman (Washington)

OUTSIDE EXHIBITS

The Ramjet

Static firing of an actual ramjet engine. Past, present and future applications.

Doug Lacy (Kaneland)

Solar Energy

A solar popcorn popper, solar water heater, and solar cell illustrate the principles of solar energy systems.

Joe Flach (St. Anthony)

EXHIBITS IN WOODSHOP BUILDING

Flight Control

An actual flight demonstrator shows how control surfaces act upon an aircraft. (Audience Participation)

Eric Bermingham (Rantoul)

Computer-Aided Aerospace Graphics

An advanced computer-aided design work station demonstrates the use of computer graphics in aerospace design and other applications.

Matt Pierce (Moline)

NASA Movies

Space shuttle; space research; energy alternatives

Kenneth Kendl (St. Ignatius)

V/STOL Systems
(Vertical/Short Takeoff and Landing)

Concepts in V/STOL aircraft. History, development, and current examples. (An AIAA student exhibit)

Tony Deley (Chatham-Glenwood)

Sailplane Airfoil Design

The basics of airfoil design. Visitors may design their own airfoils on a computer. Sailplane airfoils will be featured. (Audience Participation)

Bob Sholtes (Gordon Technical)

Flyby Table

Demonstration of how spacecraft may utilize the gravitational field of an intermediate planet to reach a final destination. (Audience Participation)

Ted Roberts (Bloom Trail)

Aerospace Industrial Displays

Current aerospace technology

Mark Lo (Deerfield)

CENTRAL EXHIBIT (LOOMIS LAB)

Computational Aerodynamics

Important developments and practical applications of the technique of computational aerodynamics.

Gregg Allred (Evanston)

ACKNOWLEDGEMENTS

Prof. Yen
Carrol Swann
Wayne Schillinger
Dorothy Nugent
Barbara Reed
NASA
McDonnell Aircraft—St. Louis
McDonnell Douglas—Bill Hemenway
—Lynn Hanson
—Ed Riley

ASSISTANT EXHIBITORS AND PARTICIPATING STUDENTS

Steve Alexander
Steve Berry
Mike Burghardt
Ron Clifton
Paul Tyson Couey
Stanley Deal
Jeff Donofrio
Michael Dunton
Nancy Ericson
Steve Feldman
Juan Pablo Fernandez
Dave Fliegel
Geff Gast
Mary Ann Gleeson
Jim Hansen
Tom Herrick
Kerry Hicks
Steve Kienle
Lisa Koeller
Rich Kozel
Warren Kuntz
Laura Kusiak
Mike McCay

Mike McLain
Tim Miller
Hieu Nguyen
Sergio Ochoa
Randal Otte
Sharon Rabens
Jeff Rand
Wayne M. Rezzonoico
Jeff Ridder
Julie Rinkenberger
Ted Roberts
Daniel Sakoda
Stu Shapiro
Greg Schultz
Steve Simkins
Jim Smith
Phil Sweeney
Peter Szak
Kirk Vanden
Rob Vasquez
Dave Wood
Kyriake Zaroyiannis

ENGINEERING OPEN HOUSE AERO/ASTRO STUDENT COMMITTEE

Chairperson
Gregg Blaszk (Holy Cross)

Co-Chairpersons
Roger Blasius (Willowbrook)
Roy Richter (Hillcrest)

Faculty Advisor
Charles E. Bond